

In the Claims:

1. (Currently Amended) A projection system comprising:

a projector to project an image composed of visible light in one or more ranges of wavelengths; and

a projection screen having comprising a plurality of pixels, each pixel comprising:

a plurality of sub-pixels that:

at least one of reflect and transmit the one or more ranges of wavelengths to display the image; and

absorb visible wavelengths of light in at least one other range that is not included in the one or more ranges; and

one or more spaces defined between adjacent said sub-pixels that at least one of reflect and transmit the one or more ranges and the at least one other range.

2. (Original) A projection system as described in claim 1, wherein each said sub-pixel is smaller than a pixel projected on the projection screen by the projector.

3. (Original) A projection system as described in claim 1, wherein the one or more ranges include:

a range of red wavelengths of visible light;

a range of green wavelengths of visible light; and

a range of blue wavelengths of visible light.

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2 4. (Original) A projection system as described in claim 1, wherein the
3 projector does not project wavelengths of light in the at least one other range.

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5 5. (Original) A projection system as described in claim 1, wherein the
6 image is provided by an additive color technique so as to have a full-color
7 appearance to the human eye.

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9 6. (Original) A projection system as described in claim 1, wherein the
10 plurality of sub-pixels absorb the visible wavelengths of light in the at least one
11 other range by utilizing a material selected from the group consisting of:

12 an optical filter;

13 a pigment;

14 an optical coating;

15 an optical dye; and

16 any combination thereof.
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18 7. (Original) A projection system as described in claim 1, wherein the
19 projection screen includes a substrate that reflects or transmits visible light in the
20 one or more ranges of wavelengths.
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1 8. (Original) A projection system as described in claim 1, wherein the
2 projector includes a component selected from the group consisting of:

3 a digital micromirror device (DMD);

4 a liquid crystal display (LCD);

5 a grating light valve (GLV); and

6 a liquid crystal on silicon (LCOS) device.

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8 9. (Original) A projection system as described in claim 1, wherein each
9 of the one or more ranges has a spectral width selected from the group consisting
10 of:

11 approximately 100 nanometers or less;

12 approximately 35 nanometers or less; and

13 approximately 5 nanometers or less.
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1 10. (Currently Amended) A projection screen comprising a substrate
2 having thereon:

3 a plurality of pixels, each pixel comprising a plurality of sub-pixels ~~that are~~
4 formed from one or more absorption materials that:

5 at least one of reflect and transmit visible light in one or more ranges
6 of wavelengths;

7 absorb visible light in at least one other range of wavelengths that is
8 not included in the one or more ranges; and

9 define one or more spaces between adjacent said sub-pixels that at
10 least one of reflect and transmit visible light in the one or more ranges and
11 the at least one other range;

12 wherein the visible light that is at least one of reflected and
13 transmitted provides an image projected from a projector and having
14 wavelengths of light in the one or more ranges.

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16 11. (Original) A projection screen as described in claim 10, wherein
17 each said sub-pixel is smaller than a pixel projected by the projector.

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19 12. (Original) A projection screen as described in claim 10, wherein the
20 substrate reflects or transmits visible light in the one or more ranges of
21 wavelengths.
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1 13. (Original) A projection screen as described in claim 10, wherein the
2 one or more ranges include:

- 3 a range of red wavelengths of visible light;
4 a range of green wavelengths of visible light; and
5 a range of blue wavelengths of visible light.

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7 14. (Original) A projection screen as described in claim 10, wherein the
8 image has a full-color appearance to the human eye.

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10 15. (Original) A projection screen as described in claim 10, wherein the
11 one or more absorption materials include a material selected from the group
12 consisting of:

- 13 an optical filter;
14 a pigment;
15 an optical coating;
16 an optical dye; and
17 any combination thereof.

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19 16. (Original) A projection screen as described in claim 10, wherein
20 each of the one or more ranges has a spectral width selected from the group
21 consisting of:

- 22 approximately 100 nanometers or less;
23 approximately 35 nanometers or less; and
24 approximately 5 nanometers or less.

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2 17. (Currently Amended) A method comprising:
3 projecting by a projector an image composed of visible light in one or more
4 ranges of wavelengths on a projection screen;
5 displaying the projected image by the projection screen by at least one of
6 reflecting and transmitting the visible light;
7 ~~outputting by receiving, by the projection screen, from~~ an ambient light
8 ~~source-source,~~ wavelengths of visible light in at least one other range not included
9 in the one or more ranges; and
10 absorbing by the projection screen wavelengths of light ~~output-by-received~~
11 ~~from~~ the ambient light source in the at least one other range by a plurality of sub-
12 ~~pixels that are patterned over~~ elements defining a pattern on a substrate of the
13 projection screen.

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15 18. (Currently Amended) A method as described in claim 17, wherein
16 ~~each said sub-pixel is smaller than a pixel projected on the projection screen by the~~
17 ~~projector~~ the elements defined in the pattern comprise sub-pixels, and a plurality of
18 sub-pixels comprise a pixel.

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20 19. (Original) A method as described in claim 17, wherein the outputting
21 further comprises outputting by the ambient light source visible wavelengths of
22 light in the one or more ranges.
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1 20. (Original) A method as described in claim 17, wherein the one or
2 more ranges include:

- 3 a range of red wavelengths of visible light;
4 a range of green wavelengths of visible light; and
5 a range of blue wavelengths of visible light.

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7 21. (Original) A method as described in claim 17, wherein each of the
8 one or more ranges has a spectral width selected from the group consisting of:

- 9 approximately 100 nanometers or less;
10 approximately 35 nanometers or less; and
11 approximately 5 nanometers or less.

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13 22. (Currently Amended) A method comprising:

14 forming over a substrate one or more materials that at least one of reflect
15 and transmit visible light in one or more ranges of wavelengths; and

16 forming over the substrate one or more absorption materials that absorb
17 visible light in at least one other range of wavelengths not included in the one or
18 more ranges such that the one or more absorption materials are patterned over the
19 substrate to form a plurality of ~~sub-pixels~~regions,

20 wherein the visible light that is at least one of reflected and transmitted
21 provides an image projected from a projector and having wavelengths of light in
22 the one or more ranges.

23. (Original) A method as described in claim 22, wherein the forming over the substrate of the one or more absorption materials further comprises:
forming the one or more absorption materials over an initial substrate;
releasing the one or more absorption materials from the initial substrate;
and
applying the released one or more absorption materials to the substrate.

24. (Original) A method as described in claim 22, wherein the plurality of absorption materials are formed in layers that include at least one of aluminum, silicon dioxide and TaAl.

25. (Currently Amended) A method as described in claim 22, wherein the plurality of ~~sub-pixels~~regions comprise a plurality of sub-pixels, and wherein define one or more spaces between adjacent said sub-pixels that is smaller than a pixel projected on the projection screen by the projector~~pixels are defined by two or more contiguous sub-pixels.~~

26. (Currently Amended) A method as described in ~~claim 22~~claim 25, wherein each ~~said sub-pixel~~ is smaller than ~~a each~~ pixel projected on the projection screen by the projector.

27. (Currently Amended) A method as described in claim 22, wherein the plurality of ~~sub-pixels~~regions are formed by expelling the absorption material over the substrate.

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2 28. (Original) A method as described in claim 22, wherein the one or
3 more absorption materials include one said absorption material selected from the
4 group consisting of:

- 5 an optical filter;
6 a pigment;
7 an optical coating;
8 an optical dye; and
9 any combination thereof.

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11 29. (Original) A projection screen as described in claim 22, wherein
12 each of the one or more ranges has a spectral width selected from the group
13 consisting of:

- 14 approximately 100 nanometers or less;
15 approximately 35 nanometers or less; and
16 approximately 5 nanometers or less.

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18 30. (Original) A projection screen comprising a structure made by the
19 method of claim 22.
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1 31. (Currently Amended) A system comprising:

2 means for projecting an image composed of visible light in one or more
3 ranges of wavelengths; and

4 means for displaying the projected image having:

5 a plurality of ~~sub-pixels~~regions that:

6 at least one of reflect and transmit the one or more ranges of
7 wavelengths to display the image; and

8 absorb visible wavelengths of light in at least one other range
9 that is not included in the one or more ranges; and

10 one or more spaces that are defined between adjacent said ~~sub-~~
11 ~~pixels~~regions that at least one of reflect and transmit the one or more ranges
12 and the at least one other ~~range~~range.

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14 32. (Original) A system as described in claim 31, wherein the projecting
15 means includes a projector.

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17 33. (Original) A system as described in claim 31, wherein the displaying
18 means includes a projection screen.
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